

# Analysis and design of ultrawide-band and high-power microwave pulse interactions with electronic circuits systems

University of Illinois at Chicago

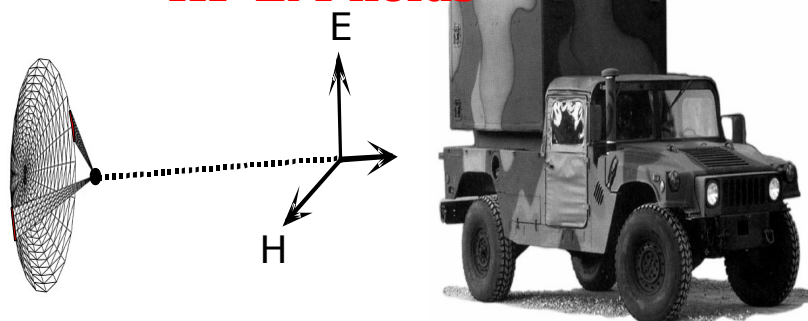
<http://www.ece.uic.edu/MURILSF/>



## Participants

University of Illinois at Chicago (UIC), Clemson University (CU), University of Houston (UH), University of Illinois at Urbana-Champaign (UIUC), University of Michigan (UM)

**HP EM fields**



**External EM Source (Impulse Radiating Antenna)** **Illuminated target**

## Objective

- Understand and predict the effects of the **new electromagnetic threat** represented by **high power microwave (HPM)** and **ultrawide-band (UWB) pulses** on digital electronic systems found inside fixed or moving platforms.
- Develop recommendations for performing field tests/measurements.

## Approach

- Apply electromagnetic topology to predict the effects of HPM/UWB aggressor signals.
- Apply recently developed fast and accurate computer simulation tools.
- Further extend the capabilities of the computer simulation tools to obtain a better understanding of the overall problem.

## Accomplishments

- Fast computer codes are under development at UIUC, and UM.
- Topology studies are underway at CU.
- Analysis of devices and of processor faults are conducted at CU and UIC.
- Validation tests for codes are being developed and UIC.